

Our Case No. : 11284/3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Aners Lundquist)
)
)
Serial No.)
)
Filing Date: October 19, 2001)
)
For METHOD AND DEVICE FOR)
CLEANING AND DISINFECTING)
TREATMENT OF WATER)

Pat. Amatt. A.

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This is a PRELIMINARY AMENDMENT being filed with the
Nationalization of PCT/SE00/00738 in the United States of America under 35
U.S.C. 371.

In the Claims:

Cancel claim 3.

Amend claims 2 and 4 as follows:

A1

20

2. Method according to claim 1, characterized in that the water is
brackish or fresh water.

A2

3. ~~4~~

Device for realization of the method according to claim 1 or
claim 2, characterized in that it includes:

- a source of a rectified pulsating magnetic field; and

- a conducting element, which lacks any significant ability to

release silver during use of the device and which is arranged in the pulsating magnetic field such that an electric field is produced around the conducting element by electromagnetic induction during use of the device; and

- a device for changing the direction of the pulsating magnetic field in a time-dependent manner.

REMARKS

Claim 3 has been cancelled and claims 2 and 4 have been amended to accommodate for the cancellation of claim 3 and to place them in better form. This application now contains claims 1, 2 and 4-7.

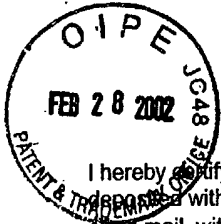
Respectfully submitted,

Dated: October 19, 2001

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on

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Date of Deposit

F. David AuBuchon

Name of Applicant, Assignee or
Registered Representative

Signature

February 20, 2002

Date of Signature

Our Case No. : 11284/3

Rel. Amnt. B.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Anders Lundquist)

Serial No. 10/030,511)

Filing Date: October 19, 2001)

For METHOD AND DEVICE FOR
CLEANING AND DISINFECTING
TREATMENT OF WATER)

SECOND PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This is the second PRELIMINARY AMENDMENT being filed in this application.

In the Specification:

Please add the following paragraph on page 1, immediately following the title "Method and device for cleaning and disinfecting treatment of water":

B1

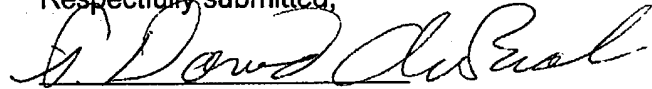
This application is a nationalization of and claims priority under PCT Application No. PCT/SE00/00738 that was filed on April 18, 2000. This application was published, in accordance with PCT Article 21(2), in the English language as WO 00/63124 on October 26, 2000. PCT Application No. PCT/SE00/00738 claimed priority under Swedish Patent Application No. 9901377-3 that was filed on April 19, 1999.

REMARKS

A reference to the claim of priority under PCT Application No. PCT.SE00/OO738 and the Swedish Patent Application No. 9901377-3 that was filed on April 19, 1999 is hereby set forth on page 1, of the specification in the first sentence following the TITLE.

Dated: February 20, 2002

Respectfully submitted,



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Inv.
B1

Method and device for cleaning and disinfecting treatment of water

The present invention concerns a method and a device for cleaning and disinfecting treatment of water, during which the water is subjected to an electric field.

During such methods that are currently known, a current is normally lead through the water that is to be treated, which leads to various electrochemical reactions in the water. In this way ionic compounds, such as salts dissolved in the water that are often added in association with the cleaning/disinfecting, are dissociated, furthermore, ions can be released from either or both of the electrodes, and the water itself can be decomposed into hydrogen gas and oxygen gas at the cathode and the anode, respectively. These reactions, and the current itself, have a killing effect on various micro-organisms in the water. Furthermore, the ionisation can lead to the aggregation of colloid particles and suchlike, which thus become easier to remove from the water.

An example of prior art of said kind is described in WO 86/01543: An electrode device for cleaning water in swimming pools has at least one copper electrode, and the current that is led between the electrodes is reversed at defined intervals. The only intervals of which examples are given are 22 and 25 seconds long. It is specified that the electrodes should be manufactured of a material that resists electrolysis. WO 86/01543 makes it also clear that silver must be added in cases where one wishes to combat micro-organisms such as *coli* bacteria in the swimming pool, for example by having one of the electrodes manufactured of silver or a combination of silver and copper. The device according to WO 86/01543 is fed with rectified current of a current strength that is not specified, and the time interval is regulated by an integrated time-control circuit of type LM 555.

It is desired in this context to achieve a technique of the aforementioned type that does not depend on the electrolysis of dissolved salts or the release of metal from the electrodes in order to achieve cleaning/disinfecting, in particular to avoid the use of silver, since not only is it well known that silver compounds are toxic also for humans, but also it clearly involves a significant cost, since silver usually commands a high price.

The present invention, which is defined by the attached claims, offers the possibility of fulfilling this desire. To be more precise, the present invention concerns a method for cleaning and disinfecting treatment of water, during which the water is subjected to at least one electric field by which the electric field is a low-current field with pulsating direct voltage. No silver is added to the water during the method, neither in the form of silver metal nor silver salts. The polarity of the low-current field is reversed at previously defined time intervals, which are up to about 20 seconds long.